

What is Claimed is:

1. Process for application of active substances to a wound surface, wherein a planar padding of a porous material is laid upon the wound surface, wherein a sealing overlay is provided to cover the wound surface and the padding and is sealingly secured to the skin surface about the wound rim and wherein at least one fluid active substance is introduced via at least supply line into the porous padding and via at least one removal is suctioned out of the padding, thereby characterized, that the introduction and the suctioning out of the active substance is timely controlling in such a manner, that the introduction and the suctioning off are switched or conducted in separate, not overlapping time intervals ( $T_1$  or as the case may be  $T_3$ ) and that between the introduction of and the suctioning off a active dwell time interval ( $T_2$ ) is controlled.
2. Process according to Claim 1, thereby characterized, that subsequent to the suctioning off ( $T_3$ ) of the active substance until the next introduction ( $T_1$ ) a vacuum time interval ( $T_4$ ) is controlled, in which a vacuum is maintained under the covering over lay.
3. Process according to Claim 1 or 2, thereby characterized, that the introduction of the active substance occurs with time wise controlled slow increasing of the volumetric flow of the active substance.
4. Process according to one of Claims 1 through 3, thereby characterized, that the suctioning off occurs with time wise controlled slowly increasing vacuum.
5. Process according to one of Claims 1 through 4, thereby characterized, that at the beginning of the introduction the

active substance a predetermined volume of the active substance is introduced under increased or higher pressure, in order to rinse through the porous padding.

6. Device for application of active substances to a wound surface, with a padding of a porous material for application upon a wound surface, with a sealing cover for covering the wound surface and the padding, which is sealingly provided to the skin surface, with at least supply line introduced into the padding for a fluid active substance and with at least one removal line introduced into the padding, which is connectable to a vacuum source, thereby characterized, that the supply line (22; 22.1; 22.2) is provided with a controllable closure mechanism (32; 38; 40; 44; 46; 48; 50), that the removal line (26) is provided with a controllable closure device (34; 38; 42; 44; 46; 48; 52) and that a controller (36), is provided which time wise so controls these closure mechanisms (32; 34; 38; 40; 40; 42; 44; 46; 48; 50; 52), so that the closure mechanism (32; 34; 38; 40; 40; 42; 44; 46; 48; 50; 52) of the supply line (22; 22.1; 22.2) and the closure mechanism (34; 38; 40; 42; 44; 46; 48; 52) of the removal line (26) are not time wise opened overlappingly and that between the closure of the closure mechanism (32; 34; 38; 40; 42; 44; 46; 48; 50; 52) the supply line (22; 22.1; 22.2) and the opening of the closure mechanism (34; 38; 40; 40; 42; 44; 46; 48; 50; 52) of the removal line (26) a treatment dwell time interval ( $T_2$ ) is programmed.
7. Device according to Claim 6, thereby characterized, that the padding (12) is comprised of an elastic compressible porous material.

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8. Device according to Claim 7, thereby characterized, that the padding (12) is comprised of an open poured PVA-foam material.
9. Device according to one of Claims 6 through 8, thereby characterized, that the sealing cover is a flexible foil (14), which is air tight, however permits diffusion of water vapor.
10. Device according to one of Claims 6 through 9, thereby characterized, that the supply line (22; 22.1; 22.2) and the removal line (26) are introduced into the padding (12) via a common drainage hose (16).
11. Device according to one of Claims 6 through 9, thereby characterized, that the supply line (22; 22.1; 22.2) and the removal (26) respectively via separate drainage hoses (16 or as the case may be 18) are introduced into the padding (12).
12. Device according to Claim 6, thereby characterized, that the opening process of the closure mechanism (32; 34; 38; 40; 42; 44; 46; 48; 50; 52) of the supply line (22; 22.1; 22.2) is time wise controllable by means of a controller (36).
13. Device according to Claim 6, thereby characterized, that the opening process of the closure mechanisms (34; 38; 40; 42; 44; 46; 48; 50; 52) of the removal line (26) are time wise controllable by means of the controller (36).
14. Device according to Claim 6, thereby characterized, that the controller (36) after the suctioning ( $T_3$ ) determines a vacuum time interval ( $T_4$ ), in which a predetermined vacuum is maintained in the padding (12).

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15. Device according to one of Claims 6 through 14, thereby characterized, that the pressure sensor (38) is introducable under the sealingly engagable cover (14), which is operably connected with the controller (36).
16. Device according to one of Claims 6 through 15, thereby characterized, that the closure mechanism (32, 34) are electromagnetic, pneumatic or hydraulic operated hose clamps. *A*
17. Device according to Claim 16, thereby characterized, that the supply line (22) or as the case may be removal line (34) [sic] are constructed as a hose introducable in a receptacle in the hose clamps (32) or as the case may be (34) and by a controller operatable piston are squeezable against a sidewall.
18. Device according to one of the Claims 6 through 15, thereby characterized, that the closure mechanisms are multi-way valves (38; 40; 42; 44; 46; 48; 50; 52).
19. Device according to Claim 18, thereby characterized, that the multi-way valves (38; 40; 42; 44; 46; 48; 50; 52) are operable via a step motor controlled by the controller (36).
20. Device according to one of Claims 6 through 19, thereby characterized, that the controller (36) is a programmable electronic controller.

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